

**FORMATION OF SILICON NITRIDE FILM**

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**Abstract**

**PURPOSE:**To form a silicon nitride film which slightly shifts threshold voltage even at a relatively high temp. and is excellent in reliability by using gaseous SiH<sub>4</sub>, NH<sub>3</sub> and N<sub>2</sub> as starting materials in specified flow rate ratios when a silicon nitride film is formed by plasma CVD.

**CONSTITUTION:**When a thin silicon nitride film as the insulating film of an electrical device is formed by CVDR with gaseous SiH<sub>4</sub>, NH<sub>3</sub> and N<sub>2</sub> as process gases, the flow rate ratio of the gaseous NH<sub>3</sub> to the gaseous SiH<sub>4</sub> is regulated to 2-10 and that of the gaseous N<sub>2</sub> to the gaseous SiH<sub>4</sub> to 13-17. A thin silicon nitride film which does not considerably shift threshold voltage even at a relatively high temp. is stably formed.

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